

CITY OF CIRCLEVILLE

BACKFLOW DEPARTMENT

RULES AND REGULATIONS



NOVEMBER 2005

RULES AND REGULATIONS 2005-1

City of Circleville

Department of Public Service

Pursuant to the authority granted under Circleville City Ordinance 40-85, Section 6109 of the Ohio Revised Code, and Section 3745-95 of the Ohio Administrative Code, the Director of the Department of Public Services hereby adopts, establishes, and publishes these rules and regulations to be effective at the earliest date allowed by law. These rules and regulations are in addition to any established requirements that have not been superseded or rescinded by this or any previous act.

APPLICATION

These Rules and Regulations shall apply to all properties served by the public potable water supply system of the City of Circleville.

WATER SYSTEMS

- For the purposes of these Rules and Regulations, the water system shall be considered as consisting of two parts: the public water supply system and the consumer's water system.
- The public water system shall consist of the source facilities and distribution system, and shall include all the facilities of the potable water system under the control of the Director of Public Services up to the point where the consumer's water system begins.
- The source shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the public water distribution system.
- The public water supply distribution system shall include the network of piping used to deliver water from the source to the consumer's water system.
- The consumer's water system shall include all parts of the facilities beyond the curb stop used to convey water from the public water supply distribution system to points of use.

PLUMBING SYSTEMS

- It shall be the responsibility of the consumer to have their water plumbing system comply with the latest revision of the Ohio Plumbing Codes and the Circleville City Codes. The consumer shall retain records of installation, maintenance, testing, and repairs as required by these Rules and Regulations for a period of at least five years.

Backflow Prevention Rules

Backflow or cross-connection control is intended to prevent the contamination or pollution of the public and consumer's potable water system. The following Backflow Prevention Rules have been approved by the Director of Public Services.

Cross-connection control devices allow for the protection of the public water supply by isolating within the consumer's water system any contaminants or pollution which could backflow through the service connection.

Cross-connection Prohibited

No water service connection shall be installed or maintained to any property where actual or potential cross-connections to the public potable or consumer's water system may exist unless such actual or potential cross-connections are abated or controlled to the satisfaction of the Department of Public Utilities and the Ohio Environmental Protection Agency (OEPA).

No connection shall be installed or maintained whereby water from an auxiliary water system may enter the public potable or consumer's water system unless the Department of Public Utilities approves such auxiliary water system and the method of connection.

There shall be no arrangement or connection by which an unsafe substance may enter the public potable water supply.

Water Use Surveys and Inspections

The owner/consumer's property shall be accessible at all reasonable times to the Department of Public Utilities or an authorized representative to perform water use surveys or to inspect or test backflow prevention assemblies within the property.

On request by the Department of Public Utilities or an authorized representative, the consumer shall furnish information regarding the piping system or water usage within the consumer's property.

It shall be the owner/consumer's responsibility to arrange periodic surveys of water use practices at their property to determine whether there are actual or potential cross-connections to the water system through which contaminants or pollutants could backflow into the potable water supply system. All cross-connection control or water use surveys must be conducted by the Department of Public Utilities or an authorized representative.

Where Protection Is Required

An approved backflow prevention assembly or method shall be installed on each service line to a consumer's water system serving properties, where any of the following conditions exist:

- I. Properties that have or have access to second source water unless actual or potential cross-connections are abated or controlled to the satisfaction of the Department of Public Utilities and the OEPA.
- II. Properties where any substance is handled which can create an actual or potential hazard to the public potable water supply. This shall include properties having sources or systems containing process fluids or water originating from the public potable water supply system that are no longer under the quality control of the Department of Public Utilities.
- III. Properties having internal cross-connection that in the judgment of the Department of Public Utilities are not correctable or where intricate or complex plumbing arrangements make it impractical to determine whether or not cross-connections exist.
- IV. Properties with security requirements, other prohibitions or restrictions which make it impossible or impractical to make a complete cross-connection survey.
- V. Properties supplied by more than one service, where the services are connected to the water distribution system within different pressure districts.
- VI. Properties having repeated history of establishing or re-establishing cross-connections.
- VII. Installation of backflow prevention assemblies in parallel is required if the complete interruption of water is critical to the owner/customer's operations.

Type of Protection Required

The type of protection required shall depend on the degree of hazard and be determined by the Department of Utilities.

- I. A "**severe health hazard**" classification shall mean an actual or potential threat of contamination of the water system that could be lethal. An approved fixed air gap separation shall be installed and maintained in accordance with Rule and Regulation 2005-1.
- II. A "**health hazard**" classification shall mean an actual or potential threat of contamination of a physical or toxic nature that would be a danger to health. An approved fixed air gap separation or an approved reduced pressure principle backflow prevention assembly shall be installed and maintained in accordance with Rule and Regulation 2005-1.

- III. A “**non-health hazard**” classification shall mean an actual or potential threat to the physical properties of the water supply, but which would not constitute a health hazard, as defined. An approved fixed air gap separation, an approved reduced pressure principle back flow prevention assembly or an approved double check backflow assembly shall be installed and maintained in accordance with Rule and Regulation 2005-1.
- IV. The type of protection required for instances described in “Where Protection Is Required” Numbers 3, 4, 5 & 6 shall be an approved fixed air gap or an approved reduced pressure principle backflow prevention assembly.
- V. The type of protection required for instances described in “Where Protection Is Required” Number 7 shall be equal to the containment assembly required.
- VI. Fire protection systems with chemicals added or with the ability to add chemicals shall install approved reduce pressure principle backflow assembly.
- VII. Fire protection systems without chemicals shall install an approved double check backflow assembly.
- VIII. A reduced pressure detector assembly (ASSE 1047) and a double check detector check assembly (ASSE 1048) can be installed in lieu of a reduced pressure or double check backflow assembly, respectively. Note that all meter requirements must comply with the Department of Public Utilities meter installation specifications.

Below is a list of property types and their respective backflow requirements. This list was established as a guideline and is not to be used as a legal requirement without the approval of the Department of Public Utilities. Updates to these requirements can be obtained by contacting the Backflow Prevention Department at (740) 477-8250.

TYPE OF PROPERTY	REQUIREMENTS
Industrial	Reduced Pressure Backflow Device
Commercial	Reduced Pressure Backflow Device
Residential With Lawn Irrigation*	Reduced Pressure Backflow Device
Residential with water uses other than domestic	Reduced Pressure Backflow Device
Residential with second source water or access to Second source water	Reduced Pressure Backflow Device

*Pressure Vacuum Breaker may be used on lawn irrigation.

**THE FOLLOWING ARE TO BE PROTECTED AS LISTED,
REGARDLESS OF ON-SITE WATER-USE HAZARDS**

TYPE OF PROPERTY	REQUIREMENTS
Hospitals	Reduced Pressure Backflow Device
Mortuaries	Reduced Pressure Backflow Device
Medical Clinics, Offices, etc ...	Reduced Pressure Backflow Device
Nursing & Convalescent Homes	Reduced Pressure Backflow Device
Laboratories	Reduced Pressure Backflow Device
Sewage Treatment Plants	Reduced Pressure Backflow Device
Car Washes	Reduced Pressure Backflow Device
Lawn Irrigation	Reduced Pressure Backflow Device
Automotive & Auto Body Repair Shops	Reduced Pressure Backflow Device
Commercial Lease Accounts	Reduced Pressure Backflow Device
Full Service Restaurants	Reduced Pressure Backflow Device

Backflow Prevention Assemblies

- I. The City of Circleville Department of Public Utilities requires that backflow prevention devices be endorsed by the American Society of Sanitary Engineering
- II. Installation of approved assemblies shall be made in accordance with standard detail drawing 1 and to the satisfaction of the Department of Public Utilities.
- III. Maintenance shall be performed as recommended by the manufacturer of the assembly and the Department of Public Utilities.
- IV. A fixed proper air gap separation is defined as a physical separation between the free flowing discharge end of a potable water supply pipeline and an open (non-pressure receiving) vessel. The separation shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel and in no case less than one (1) inch.

Testing and Maintenance

Wherever backflow assemblies are required by the Department of Public Utilities, it shall be the duty of the owner/consumer to have inspections, tests, maintenance and repairs made according to the following schedule:

- **FIXED AIR GAP SEPERATION BACKFLOW ASSEMBLIES** shall be inspected and tested at the time of installation and every twelve (12) months, or more frequently if required by the Department of Public Utilities.
- **REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLIES** shall be inspected and tested at the time of installation and at least every twelve (12) months, or more frequently if required by the Department of Public Utilities, and rebuilt as needed.
- **DOUBLE CHECK VALVE BACKFLOW ASSEMBLIES** shall be inspected and tested at the time of installation and at least every twelve (12) months, or more frequently if required by the Department of Public Utilities, and rebuilt as needed.
- **PRESSURE VACUUM BREAKER BACKFLOW ASSEMBLIES** shall be inspected and tested at the time of installation and at least every twelve (12) months, or more frequently if required by the Department of Public Utilities, and rebuilt as needed. The consumer shall visually inspect the installed assembly every three (3) months for conditions that would prevent the normal functioning of the assembly.
 - I. Backflow Testers who are certified with the Department of Public Utilities shall perform testing. The actual tester must possess an active Ohio Department of Commerce Backflow Prevention Assembly Tester's Certificate and be approved by the Department of Public Utilities.
 - II. Each backflow prevention assembly shall have a tag attached listing the date of the most recent test, the name of the tester, the tester's certificate number, the company with which the tester is employed, the type and date of any repairs, and the test results.
 - III. The consumer shall forward test and repair results to the Department of Public Utilities Backflow Prevention Department.
 - IV. The consumer shall maintain a maintenance and test log and store it in a manner so that it will always be readily available to the Department of Public Utilities or an authorized representative. The log shall include: date of each test, name and certificate number of the tester, name of the company with which the tester is employed, test results, repairs or servicing required, repairs made and date completed, and servicing performed and date completed.
 - V. Fixed air gap separation assemblies shall have a tag attached listing the date of the most recent visual inspection and the name of the certified inspector.
 - VI. Whenever backflow prevention assemblies required by the Department of Public Utilities are found to be defective, they shall be repaired or replaced by the owner/consumer, at their expense, without delay.
 - VII. Backflow prevention assemblies shall not be bypassed, made inoperative, removed or otherwise made ineffective without specific authorization by the Department of Public Utilities.
 - VIII. Test equipment used for initial, annual or emergency backflow prevention assembly testing required by the Department of Public Utilities, shall be calibrated at least every twelve (12) months by an independent calibration company approved by the Department of Public Utilities.

Installation

Required backflow prevention assemblies shall be installed at a location and in a manner approved by the Department of Public Utilities and at the expense of the water consumer. For detailed instruction refer to standard drawing 1.

Violations

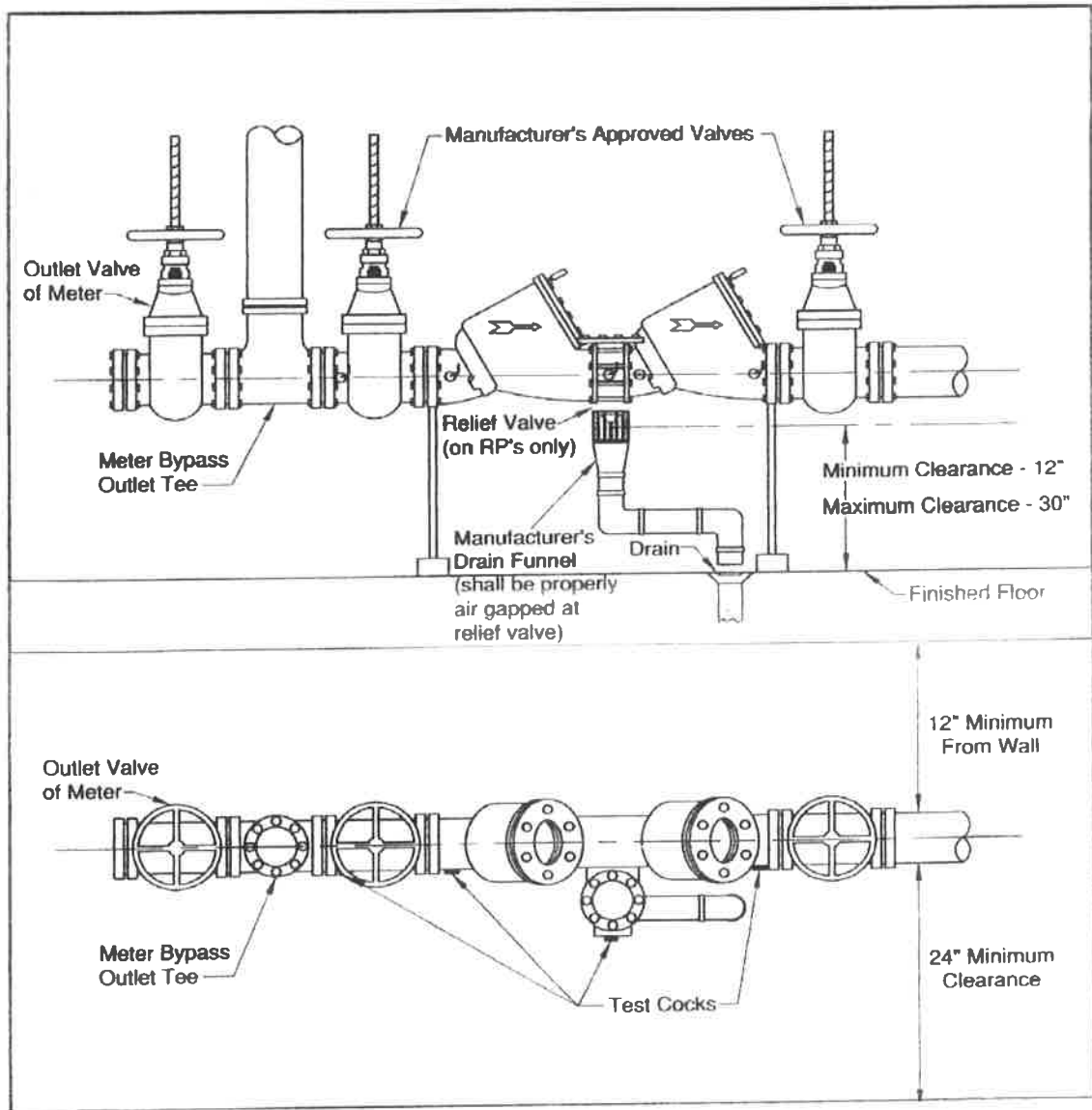
Non-compliance with any of the backflow prevention requirements may result in certain penalties including discontinuation or denial of water service until the consumer has eliminated the actual or potential risk of cross-connection to the satisfaction of the Department of Public Utilities.

SUPPORT DOCUMENTATION

- Backflow prevention assemblies shall be installed so that the inlet shut-off valve of the backflow device is the next piped fitting (including piping) after the water meter, except where a meter bypass, limited area fire system or strainer is needed.
- Where the meter is located in the pit and the backflow device has been approved to be installed in the building, the backflow assembly inlet valve shall be twelve (12) inches from the wall or immediately after the ninety degree bend where the supply enters the floor.
- All assemblies are to be installed in a horizontal orientation.
- Minimum and maximum ground clearance is measured from the floor to the lowest part of the assembly.
- Each installation shall include properly located test cocks and manufacturer approved tightly closing shutoff valves.
- All shut off valves two (2) inch and under are to be ball valve types.
- No backflow assembly shall be subject to excessive heat or cold.
- It is recommended that a floor drain be installed as close as possible to the assembly.
- Reduced Pressure Principle Backflow Assemblies shall not be installed in a pit, vault or any area subject to flooding and shall always have an approved air gap assembly.
- Pressure vacuum Breakers shall never be subject to back pressure and must be installed a minimum of 12" above the highest downstream discharge.
- Lawn Irrigation Systems shall not have any outside exposed tees, drains or hose bibs.
- Backflow Prevention Assemblies shall prevent the release of on-site pressure to the public distribution water system. Therefore, internal compensation in accordance with the Ohio Plumbing Code shall be considered and made when needed, to relieve any excessive increase in on-site pressure due to hot water heating systems or other heat sources.
- No Backflow Prevention Assembly shall be bypassed unless the bypass line contains equal backflow protection and the approval of the Department of Public Utilities.

NOTE: If there is a reason any of these criteria cannot be met, you will need to contact the Backflow Prevention Department at (740)477-8250.

DRAWING 1



REDUCED PRESSURE DEVICE

In these figures, the RP device is shown on the service connection. The minimum clearance of 12 inches above the floor from the lowest point of the RP device above the floor grade is to insure an air gap between the relief valve and any water that might puddle beneath the device. The maximum height is so that the device will be easy to work on during testing and maintenance. Minimum distances from a wall or protective enclosure are for testing and maintenance as well.